

What is claimed is:

- 1 1. A meandering cantilever contact comprising:
 - 2 a. a triangular footprint having a center corner
 - 3 coinciding with a contacting axis along which a
 - 4 test contact is contacting said cantilever
 - 5 contact;
 - 6 b. a contact tip proximal to said contacting axis
 - 7 for contacting said test contact;
 - 8 c. a base mechanically connecting said cantilever
 - 9 contact to a carrier structure, said base being
 - 10 placed within a distal portion of said footprint
 - 11 and substantially coplanar with said footprint,
 - 12 said distal portion being distal to said
 - 13 contacting axis;
 - 14 c. a base beam extending from said base towards said
 - 15 contact tip,
 - 16 d. a reverting bow at an end of said base beam that
 - 17 is close to said contact tip;
 - 18 e. a reverting beam extending from said reverting
 - 19 bow away from said contact tip;
 - 20 f. a forward bow at an end of said reverting beam
 - 21 that is distal to said contact tip;
 - 22 g. a tip beam extending from said forward bow
 - 23 towards said contact tip, said tip beam
 - 24 terminating in said contact tip.
 - 25
- 1 2. The cantilever contact of claim 1, wherein said
- 2 base beam is bent with respect to said base along
- 3 a bending axis such that said contact tip is in a
- 4 tip height above said footprint.
- 5

- 1 3. The cantilever contact of claim 2, wherein
2 said bending axis is substantially middle
3 perpendicular to said contact tip.
4
- 1 4. The cantilever contact of claim 1, wherein said
2 footprint is a substantially rectangular
3 triangle, and wherein said center corner is a
4 hypotenuse end point of said footprint.
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- 1 5. The cantilever contact of claim 1, wherein said
2 base is placed in a distant corner of said
3 footprint, said distant corner being most distant
4 to said center corner.
5
- 1 6. The cantilever contact of claim 1, wherein said
2 base further comprises a base extension extending
3 along said base beam towards said contacting
4 axis.
5
- 1 7. The cantilever contact of claim 1, wherein said
2 tip beam is connected to a mirrored
3 representation of said cantilever contact along a
4 tip beam connect, said tip beam connect is
5 substantially coincident with a symmetry boundary
6 of said footprint, said mirrored representation
7 being mirrored from said cantilever contact along
8 said symmetry boundary.
9
- 1 8. A contact set for conductively contacting two opposing
2 contacts substantially along a contacting axis in a
3 substantially balanced fashion with respect to said
4 contact axis, said contact set comprising at least one

5 upwards pointing contact and at least one downwards
6 pointing contact, both contacts being conductively
7 connected to each other via a base connect
8 establishing an independent conductive path between
9 said opposing contacts, wherein at least one of said
10 upwards and said downwards pointing contacts is a
11 meandering cantilever contact having:

- 12 a. a triangular footprint having a center corner
13 coinciding with said contacting axis;
- 14 b. a contact tip proximal to said contacting axis
15 for contacting one of said two opposing contacts;
- 16 c. a base mechanically connecting said cantilever
17 contact to a carrier structure, said base being
18 placed within a distal portion of said footprint
19 and substantially coplanar with said footprint,
20 said distal portion being distal to said
21 contacting axis;
- 22 c. a base beam extending from said base towards said
23 contact tip,
- 24 d. a reverting bow at an end of said base beam that
25 is close to said contact tip;
- 26 e. a reverting beam extending from said reverting
27 bow away from said contact tip;
- 28 f. a forward bow at an end of said reverting beam
29 that is distal to said contact tip;
- 30 g. a tip beam extending from said forward bow
31 towards said contact tip, said tip beam
32 terminating in said contact tip.

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- 1 9. The contact set of claim 8, wherein said base
2 beam is bent with respect to said base along a

3 bending axis such that said contact tip is in a
4 tip height above said footprint.
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1 10. The contact set of claim 9, wherein said
2 bending axis is substantially middle
3 perpendicular to said contact tip.
4

1 11. The contact set of claim 8, wherein at least one
2 other of said upwards and downwards pointing
3 contacts is said meandering cantilever contact.
4

1 12. The contact set of claim 11, wherein said
2 one other meandering cantilever contact is a
3 rotated representation of said meandering
4 cantilever contact rotated around a boundary
5 edge of said footprint and arranged adjacent
6 to said meandering cantilever, wherein at
7 least one of their respective bases are
8 immediately adjacent and conductively
9 connected via said base connect and such
10 that the respective contact tips of all of
11 said meandering cantilevers are within a
12 similar offset to said contacting axis.
13

1 13. The contact set of claim 12, wherein a
2 second base beam of said rotated
3 representation is bent with respect to
4 said second base along a second bending
5 axis of said mirrored representation
6 such that a second contact tip of said
7 mirrored representation is in a tip

8 height below said footprint and
9 proximal to said contacting axis.
10

1 14. The contact set of claim 12, wherein
2 said boundary edge is the longest edge
3 of said footprint.
4

1 15. The contact set of claim 14,
2 wherein said footprint is a
3 rectangular triangle and wherein
4 said longest boundary edge is a
5 hypotenuse of said footprint.
6

1 16. The contact set of claim 8, wherein said
2 footprint is a substantially rectangular
3 triangle, and wherein said center corner is a
4 hypotenuse end point of said footprint.
5

1 17. The contact set of claim 8, wherein said base is
2 placed in a most distant corner of said
3 footprint, said most distant corner being most
4 distant to said center corner.
5

1 18. The contact set of claim 8, wherein said base
2 further comprises a base extension extending
3 along said base beam towards said contacting
4 axis.
5

1 19. The contact set of claim 8, wherein said tip beam
2 is connected to a mirrored representation of said
3 cantilever contact along a tip beam connect, said
4 tip beam connect is substantially coincident with

5 a symmetry boundary along which said mirrored
6 representation is mirrored from said cantilever
7 contact.

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1 20. The contact set of claim 8 being part of a
2 multiple conductive path interconnect stage
3 having multiple representations of said contact
4 set arrayed in a circular fashion around said
5 contacting axis.

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1 21. The contact set of claim 8 being part of a
2 multiple conductive path interconnect stage
3 having multiple representations of said contact
4 set arrayed in a mirrored fashion around said
5 contacting axis.

6

1 22. An interconnect assembly for conductively contacting
2 opposing contacts substantially along their respective
3 contacting axes, said interconnect assembly
4 comprising:

5 a. a carrier structure for being placed in between
6 said opposing contacts, said carrier structure
7 having a top face and at least one opening
8 substantially concentric to at least one of said
9 contacting axes;

10 b. at least one multipath interconnect stage
11 comprising at least two of said two contact sets
12 being configured for conductively contacting two
13 opposing contacts substantially along a
14 contacting axis in a substantially balanced
15 fashion with respect to said at least one of said
16 contact axes, said contact set comprising at

17 least one upwards pointing contact and at least
18 one downwards pointing contact, said upwards and
19 downwards pointing contacts being conductively
20 connected to each other via a base connect
21 establishing an independent conductive path
22 between said opposing contacts, wherein at least
23 one of said upwards and said downwards pointing
24 contacts is a meandering cantilever contact
25 having:

- 26 i. a triangular footprint having a center
27 corner coinciding with said contacting axis;
- 28 ii. a contact tip proximal to said contacting
29 axis for contacting one of said two opposing
30 contacts;
- 31 iii. a base mechanically connecting said
32 cantilever contact to a carrier structure,
33 said base being placed within a distal
34 portion of said footprint and substantially
35 coplanar with said footprint, said distal
36 portion being distal to said contacting
37 axis;
- 38 iv. a base beam extending from said base towards
39 said contact tip,
- 40 v. a reverting bow at an end of said base beam
41 that is close to said contact tip;
- 42 vi. a reverting beam extending from said
43 reverting bow away from said contact tip;
- 44 vii. a forward bow at an end of said reverting
45 beam that is distal to said contact tip;
- 46 iix. a tip beam extending from said forward bow
47 towards said contact tip, said tip beam
48 terminating in said contact tip.

- 1 23. The interconnect assembly of claim 22, wherein
2 said base beam is bent with respect to said base
3 along a bending axis such that said contact tip
4 is in a tip height above said footprint.
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- 1 24. The interconnect assembly of claim 23,
2 wherein said bending axis is substantially
3 middle perpendicular to said contact tip.
4
- 1 25. The interconnect assembly of claim 22, wherein at
2 least one other of said upwards and downwards
3 pointing contacts is said meandering cantilever
4 contact.
5
- 1 26. The interconnect assembly of claim 25,
2 wherein said one other meandering cantilever
3 contact is a rotated representation of said
4 meandering cantilever contact rotated around
5 a boundary edge of said footprint and
6 arranged adjacent to said meandering
7 cantilever, wherein at least one their
8 respective bases are immediately adjacent
9 and conductively connected via said base
10 connect and such that the respective contact
11 tips of all of said meandering cantilevers
12 are within a similar offset to said
13 contacting axis.
14
- 1 27. The interconnect assembly of claim 26,
2 wherein a second base beam of said
3 rotated representation is bent with
4 respect to said second base along a

5 second bending axis of said mirrored
6 representation such that a second
7 contact tip of said mirrored
8 representation is in a tip height below
9 said footprint and proximal to said
10 contacting axis.

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1 28. The interconnect assembly of claim 26,
2 wherein said boundary edge is the
3 longest edge of said footprint.

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1 29. The interconnect assembly of claim
2 28, wherein said footprint is a
3 rectangular triangle and wherein
4 said longest boundary edge is a
5 hypotenuse of said footprint.

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1 30. The interconnect assembly of claim 22, wherein
2 said footprint is a substantially rectangular
3 triangle, and wherein said center corner is a
4 hypotenuse end point of said footprint.

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1 31. The interconnect assembly of claim 22, wherein
2 said base is placed in a most distant corner of
3 said footprint, said most distant corner being
4 most distant to said center corner.

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1 32. The interconnect assembly of claim 22, wherein
2 said base further comprises a base extension
3 extending along said base beam towards said
4 contacting axis.

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- 1 33. The interconnect assembly of claim 22, wherein
2 said tip beam is connected to a mirrored
3 representation of said cantilever contact along a
4 tip beam connect, said tip beam connect is
5 substantially coincident with a symmetry boundary
6 along which said mirrored representation is
7 mirrored from said cantilever contact.
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- 1 34. The interconnect assembly of claim 22 being part
2 of a test apparatus for repetitively receiving
3 and testing circuit chips, wherein one of said
4 opposing contacts is part of said test apparatus
5 and the remaining of said opposing contacts is
6 part of said circuit chip.
7
- 1 35. A contact set for conductively contacting two opposing
2 contacts substantially along a contacting axis in a
3 substantially balanced fashion with respect to said
4 contact axis, said contact set comprising at least one
5 upwards pointing contact and at least one downwards
6 pointing contact, both contacts being conductively
7 connected to each other via a base connect
8 establishing an independent conductive path between
9 said opposing contacts, wherein at least one of said
10 upwards and said downwards pointing contacts includes:
11 a. a triangular footprint having a center corner
12 coinciding with said contacting axis;
13 b. a contact tip proximal to said contacting axis
14 for contacting one of said two opposing contacts;
15 c. a base mechanically connecting said contact to a
16 carrier structure, said base being placed within
17 a distal portion of said footprint and

18 substantially coplanar with said footprint, said
19 distal portion being distal to said contacting
20 axis; and

21 c. a base beam extending from said base towards to
22 and terminating in said contact tip.

23

1 36. The contact set of claim 35, wherein said base
2 beam is bent with respect to said base along a
3 bending axis such that said contact tip is in a
4 tip height above said footprint.

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1 37. The contact set of claim 36, wherein said
2 bending axis is substantially middle
3 perpendicular to said contact tip.

4

1 38. The contact set of claim 35, wherein said upwards
2 and said downwards pointing contacts are rotated
3 representations of each other rotated around a
4 boundary edge of said footprint and arranged
5 adjacent to each other, wherein at least one of
6 their respective bases are immediately adjacent
7 and conductively connected via said base connect
8 and such that the respective contact tips of all
9 of said contacts are within a similar offset to
10 said contacting axis.

11

1 39. The contact set of claim 38, wherein a
2 second base beam of said rotated
3 representation is bent with respect to said
4 second base along a second bending axis of
5 said mirrored representation such that a
6 second contact tip of said mirrored

7 representation is in a tip height below said
8 footprint and proximal to said contacting
9 axis.

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1 40. The contact set of claim 38, wherein said
2 boundary edge is the longest edge of said
3 footprint.

4

1 41. The contact set of claim 40, wherein
2 said footprint is a rectangular
3 triangle and wherein said longest
4 boundary edge is a hypotenuse of said
5 footprint.

6

1 42. The contact set of claim 35, wherein said
2 footprint is a substantially rectangular
3 triangle, and wherein said center corner is a
4 hypotenuse end point of said footprint.

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1 43. The contact set of claim 35, wherein said base is
2 placed in a most distant corner of said
3 footprint, said most distant corner being most
4 distant to said center corner.

5

1 44. The contact set of claim 35, wherein said base
2 further comprises a base extension extending
3 along said base beam towards said contacting
4 axis.

5

1 45. The contact set of claim 35, wherein at least one
2 of said base beam is connected to a mirrored
3 representation of at least one of said contact

4 along a beam connect, said beam connect is
5 substantially coincident with a symmetry boundary
6 along which said mirrored representation is
7 mirrored from said cantilever contact.
8

1 46. The contact set of claim 45, wherein
2 respective bending axes of said contact and
3 said mirrored representation are
4 substantially middle perpendicular to their
5 common contact tip and in an angle to each
6 other.
7

1 47. The contact set of claim 35 being part of a
2 multiple conductive path interconnect stage
3 having multiple representations of said contact
4 set arrayed in a circular fashion around said
5 contacting axis.
6

1 48. The contact set of claim 35, wherein said
2 interconnect stage is part of a test
3 apparatus for repetitively receiving and
4 testing circuit chips, wherein one of said
5 opposing contacts is part of said test
6 apparatus and the remaining of said opposing
7 contacts is part of said circuit chip.
8

1 49. The contact set of claim 35 being part of a
2 multiple conductive path interconnect stage
3 having multiple representations of said contact
4 set arrayed in a mirrored fashion around said
5 contacting axis.
6

1 50. The contact set of claim 48, wherein said
2 interconnect stage is part of a test
3 apparatus for repetitively receiving and
4 testing circuit chips, wherein one of said
5 opposing contacts is part of said test
6 apparatus and the remaining of said opposing
7 contacts is part of said circuit chip.